

Date: Friday, 9/29/2006 10:43:30 AM  
 User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: 02.250 SUPPORT		
Job Number	: 28792		Part Number	: D28911		
Estimate Number	: 11057		Drawing Number	: D2891 REV A1		
P.O. Number	: N/A		Project Number	: N/A		
This Issue	: 9/29/2006 S.O. No. : N/A		Drawing Revision	: A1		
Prsht Rev.	: NC		Material	: N/A		
First Issue	: N/A		Due Date	: 10/12/2006 Qty: 12 Um: Each		
Previous Run	: 28482					
Written By	: <u>JK</u>					
Checked & Approved By	: <u>JK</u> 09/29					
Comment	: Est. C 02.11.26 Added P/O KJ					

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
1.0	PG	PURCHASING  <b>Comment:</b> PURCHASING Issue P/O: <u>2157</u> <u>C 06/10/29</u> <u>12</u> Description: D6104-003 Material: 17-4 PH SS (AMS 5643 OR AISI 630) as per Dwg D6104 Material release note required. Blank size makes (2) D2891-1
2.0	D6104003	17-4 SS Roundbar 3.25"OD  <b>Comment:</b> Qty.: 1.0000 Each(s)/Unit Total : 12.0000 Each(s) Support 2.25 dia
3.0	PACKAGING 1	PACKAGING RESOURCE #1  <b>Comment:</b> PACKAGING RESOURCE #1 Recieve & Inspect for Transit Damage Ensure Material Release Note is attached <u>P 6/10/11</u> <u>12</u>
4.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE  <b>Comment:</b> MORI SEIKI LATHE Turn blank for Haas as per Folio FA046 <u>QC/MS</u> <u>06/10/14</u> <u>12</u>
5.0	QC1	INSPECT ALL DIM TO DIM SHEET  <b>Comment:</b> INSPECT ALL DIM TO DIM SHEET <u>MS</u> <u>06/10/14</u> <u>12</u>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes  No  DQA:  Date: 06/01/07  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 9/29/2006 10:43:30 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 02.250 SUPPORT

Job Number: 28792

Part Number: D28911

Job Number:



Seq. #: Machine Or Operation:

Description :

6.0 HAAS1

HAAS CNC VERTICAL MACHINING #1



Comment: HAAS

Machine as per Folio FA046

Tumble & Deburr

J.G / Es 06/10/17

24

7.0 QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

J.G / Es 06/10/17

24

8.0 QC8

SECOND CHECK



Comment: SECOND CHECK

J.G 06/10/18

24

9.0 POWDER COATING

POWDER COATING



1101575

Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

J.G 06/10/26 X24

10.0 QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

J.G 06/10/26 04

11.0 PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: ST166

J.G 06/10/26 24

24

12.0 QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

J.G 06/10/27

Job Completion



C Loc 10127

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD				Work Order: 28792	
Description: Ø2.250 Support				Part Number: D2891-1	
Inspection Dwg: D2891 Rev. A1				Page 1 of 1	

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
<b>Lathe Section</b>									
A	2.274	2.279		2.278	2.278	2.278	2.277	M8	06/10/14
B	3.702	3.722		3.704	3.704	3.702	3.706		
C	2.564	2.584		2.574	2.574	2.567	2.574		
D	0.718	0.738		.728	.728	.728	.728		
E	0.090	0.110		.100	.100	.101	.101		
F	2.464	2.484		2.474	2.475	2.469	2.475		
G	2.029	2.049		2.035	2.035	2.034	2.035		
H	2.964	2.984		2.974	2.974	2.974	2.974		
I	0.913	0.933		.913	.913	.913	.913		
J	0.022	0.042		.032	.032	.032	.032		
K	0.090	0.110		.099	.100	.094	.100		
L									
<b>HAAS Section</b>									
AA	0.188	0.193	-DT8706	0.190	0.190	0.190	0.190		
AB	0.240	0.260		0.249	0.246	0.251	0.251		
AC	0.115	0.150		0.123	0.124	0.126	0.124		
AD	0.040	0.060		0.047	0.045	0.046	0.045		
AE	0.010	0.020		0.015	0.015	0.015	0.015		
AF	0.240	0.260		0.250	0.250	0.250	0.250		
AG	0.290	0.310		0.300	0.303	0.295	0.297		
AH	0.115	0.150		0.134	0.137	0.134	0.137		
AI	0.454	0.474		0.455	0.462	0.462	0.455		
AJ	2.779	2.789		2.784	2.780	2.781	2.780		
AK	0.240	0.260		0.250	0.250	0.250	0.250		
AL	1.002	1.042		1.040	1.040	1.041	1.040		
AM	0.053	0.073		0.063	0.063	0.063	0.063		
AN	0.257	0.262	DT8883	0.260	0.260	0.260	0.260		
AO	1.663	1.683		1.666	1.671	1.667	1.668		
AP	0.053	0.073		0.063	0.063	0.063	0.062		
AQ	0.022	0.042		0.032	0.032	0.032	0.032		
AR									
AS									
<b>Accept/Reject</b>									

Measured by:	<i>EP</i>	Audited by:	<i>JK</i>
Date:	<i>06/10/16</i>	Date:	<i>06/10/18</i>

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF <i>JK</i>	<i>JK</i>

DART AEROSPACE LTD				Work Order:	28792
Description: Ø2.250 Support				Part Number:	D2891-1
Inspection Dwg: D2891 Rev. A1				Page 1 of 1	

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	.45	.46	.47	.48	By	Date
<b>Lathe Section</b>									
A	2.274	2.279		2.279	2.279	2.279	2.279	M8	06/10/14
B	3.702	3.722		3.705	3.705	3.706	3.705		
C	2.564	2.584		2.575	2.575	2.574	2.574		
D	0.718	0.738		.728	.728	.728	.728		
E	0.090	0.110		.100	.100	.100	.100		
F	2.464	2.484		2.475	2.478	2.476	2.476		
G	2.029	2.049		2.038	2.039	2.039	2.039		
H	2.964	2.984		2.974	2.974	2.974	2.974		
I	0.913	0.933		.914	.913	.913	.913		
J	0.022	0.042		.032	.032	.032	.032		
K	0.090	0.110		.100	.100	.100	.100		
L									
<b>HAAS Section</b>									
AA	0.188	0.193	BT8706	0.190	0.190	0.190	0.190		
AB	0.240	0.260		0.244	0.248	0.247	0.248		
AC	0.115	0.150		0.120	0.125	0.124	0.121		
AD	0.040	0.060		0.051	0.049	0.049	0.049		
AE	0.010	0.020		0.015	0.015	0.015	0.015		
AF	0.240	0.260		0.250	0.250	0.250	0.250		
AG	0.290	0.310		0.298	0.297	0.296	0.297		
AH	0.115	0.150		0.134	0.135	0.134	0.134		
AI	0.454	0.474		0.461	0.460	0.461	0.461		
AJ	2.779	2.789		2.781	2.782	2.781	2.781		
AK	0.240	0.260		0.250	0.250	0.250	0.250		
AL	1.002	1.042		1.042	1.042	1.041	1.042		
AM	0.053	0.073		0.063	0.063	0.063	0.063		
AN	0.257	0.262	DT6083	0.260	0.260	0.260	0.260		
AO	1.663	1.683		1.667	1.666	1.667	1.667		
AP	0.053	0.073		0.063	0.063	0.063	0.063		
AQ	0.022	0.042		0.032	0.032	0.032	0.032		
AR									
AS									
<b>Accept/Reject</b>									

Measured by:	EP / J.G	Audited by:	
Date:	06/10/17	Date:	06/10/18

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	*

DART AEROSPACE LTD				Work Order:	28792
Description: Ø2.250 Support				Part Number:	D2891-1
Inspection Dwg: D2891 Rev. A1				Page 1 of 1	

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	.49	.210	.411	.412	By	Date
<b>Lathe Section</b>									
A	2.274	2.279		2.278	2.279	2.279	2.279	M8	06/10/18
B	3.702	3.722		3.705	3.705	3.705	3.705		
C	2.564	2.584		2.513	2.576	2.576	2.575		
D	0.718	0.738		.728	.727	.728	.728		
E	0.090	0.110		.100	.100	.100	.100		
F	2.464	2.484		2.473	2.475	2.476	2.475		
G	2.029	2.049		2.033	2.033	2.034	2.034		
H	2.964	2.984		2.974	2.974	2.974	2.974		
I	0.913	0.933		.923	.923	.923	.925		
J	0.022	0.042		.032	.032	.032	.032		
K	0.090	0.110		.099	.098	.098	.099		
L									
<b>HAAS Section</b>									
AA	0.188	0.193	DT0706	0.190	0.190	0.190	0.190		
AB	0.240	0.260		0.249	0.249	0.249	0.248		
AC	0.115	0.150		0.100	0.121	0.120	0.121		
AD	0.040	0.060		0.051	0.050	0.051	0.051		
AE	0.010	0.020		0.015	0.015	0.015	0.015		
AF	0.240	0.260		0.249	0.249	0.249	0.249		
AG	0.290	0.310		0.297	0.297	0.296	0.297		
AH	0.115	0.150		0.134	0.134	0.134	0.134		
AI	0.454	0.474		0.461	0.461	0.461	0.460		
AJ	2.779	2.789		2.781	2.780	2.781	2.780		
AK	0.240	0.260		0.250	0.250	0.250	0.250		
AL	1.002	1.042		1.043	1.041	1.041	1.041		
AM	0.053	0.073		0.063	0.063	0.063	0.063		
AN	0.257	0.262	-DT0683	0.260	0.260	0.260	0.260		
AO	1.663	1.683		1.666	1.666	1.667	1.667		
AP	0.053	0.073		0.063	0.063	0.063	0.063		
AQ	0.022	0.042		0.030	0.030	0.030	0.032		
AR									
AS									
<b>Accept/Reject</b>									

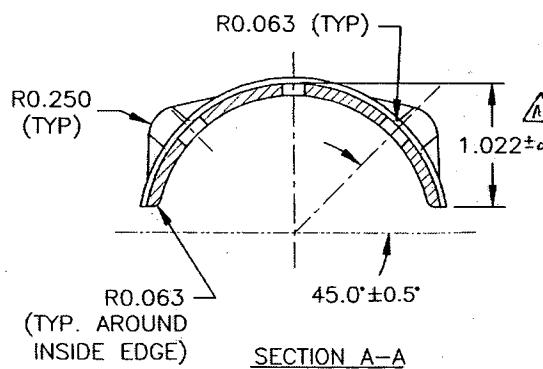
Measured by:	J.G	Audited by:	JG
Date:	06/10/17	Date:	06/10/18

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	#

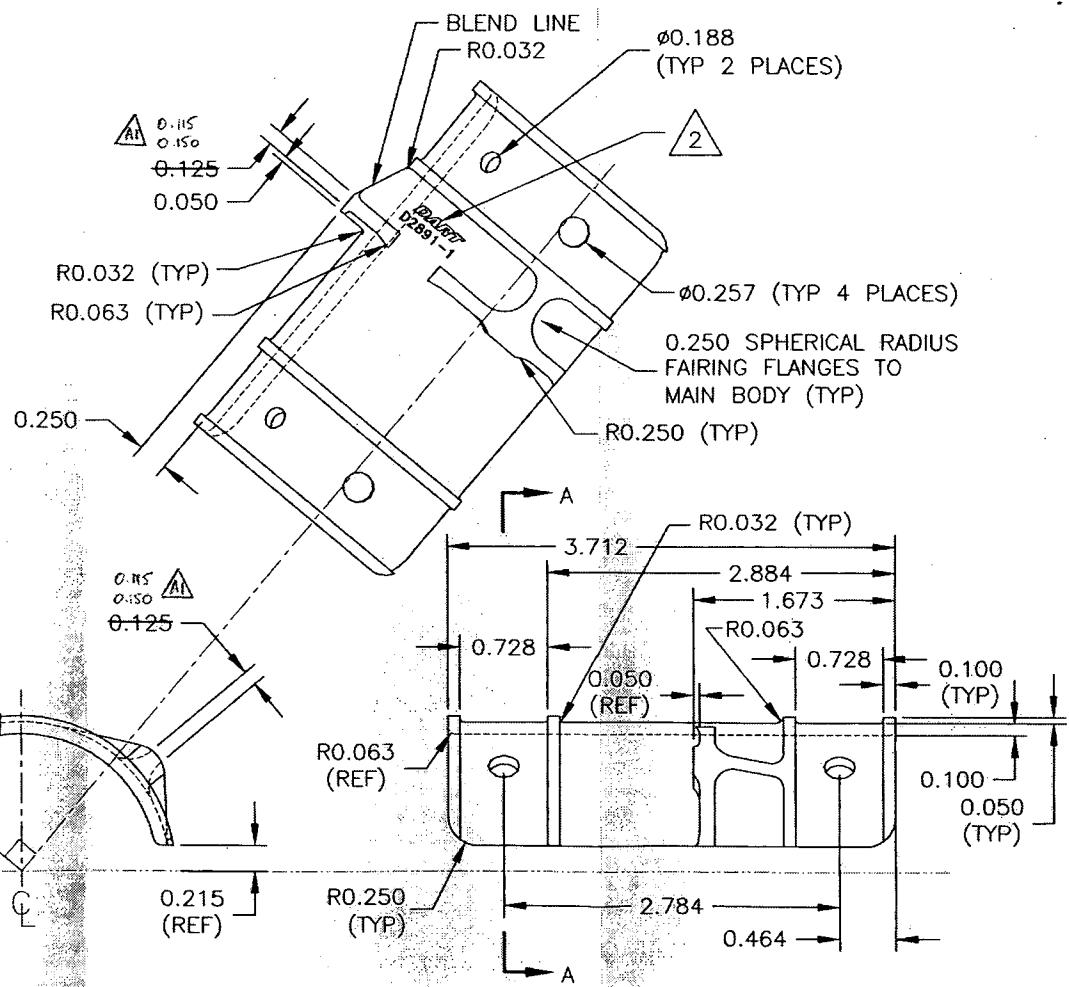
D2891-1

02091

- 1) MATERIAL: 17-4 PH STAINLESS STEEL  
HEAT TREAT TO H900 CONDITION  
(900°F FOR 1 HR, AIR COOL)  
MIN UTS = 170 KSI (38 HRc)
- 2) IDENTIFY WITH DART LOGO (PER DART SUPPLIED GRAPHIC) AND PART NUMBER IN THIS AREA WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP.
- 3) BREAK ALL UNMARKED SHARP EDGES 0.010 TO 0.020
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) TOLERANCES ARE PER DART QSI 018 (REF. X.XXX =  $\pm 0.010$ ) UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES
- 7) FINISH: POWDER COAT WHITE (REF. 4.3.5.2) PER DART QSI 005 4.3



SECTION A-A

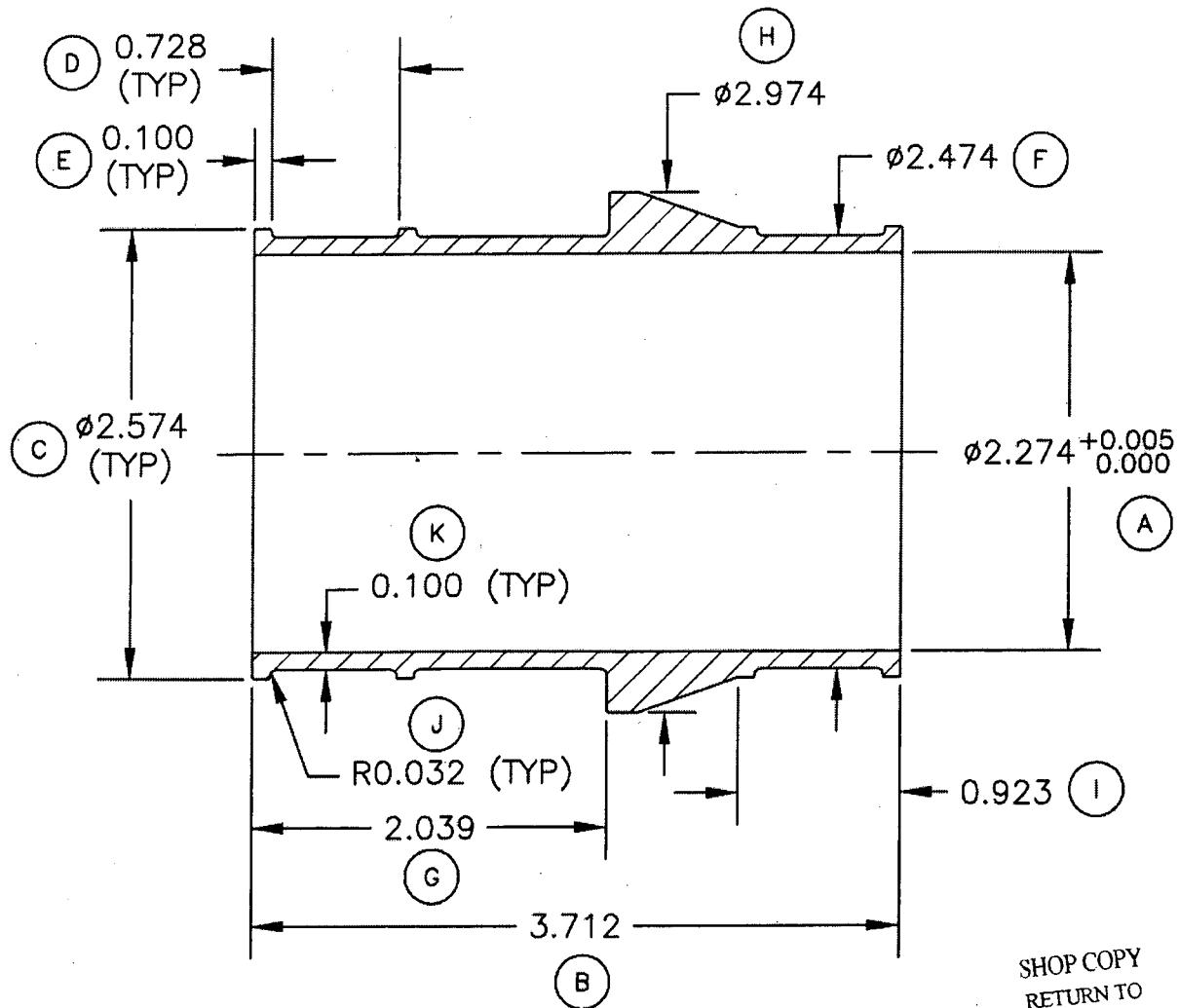


A1	02.01.17	UPDATE DIMS AS MANUFACTURED.
A	00.11.17	NEW ISSUE
DESIGN	DRAWN BY	DART AEROSPACE LTD. KAMSBURY, ONTARIO, CANADA
CP	CP	
CHECKED	APPROVED	DRAWING NO. D2891
		REV. A
DATE	00.11.17	TITLE: 02.250 SUPPORT
		SCALE: 1:1

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SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 28192

**DART**

DESIGN RF	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED <i>CH</i>	APPROVED <i>CH</i>	DRAWING NO. DSK 076 REV. A
DATE 03.05.20		SHEET 1 OF 1
		SCALE 1:1
A	03.05.20	NEW ISSUE

**RELEASED**  
03.07.20 *CH*D2891-1 TURNING DETAIL

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WITHOUT NOTICE  
WORK ORDER  
NO. *28912*

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SHIP Date 100ct06 at 13:02 From PFW  
Frogill T134433  
Via APEX FORWARDING  
FCP CONCORD  
FRT FREERAID

Route 10010 Manifest

Vehicle 1010 TRAILER  
S10 MARIO CARREIRO

Consigned to: GOOTHE LUMINA SYSTEMS LTD.  
DART AEROSPACE MONTREAL 2011593 MONTREAL  
1270 ABERDEEN ST. L5C 1T8  
HAUKESBURY, ON K6A 1K7  
Tel: 450-632-2444 Fax: 450-632-2444  
E-mail: info@goothe.com

BILL OF LADING

1) Our Order PEC-733675- 1 Your PO # P000002157  
STAINLESS STEEL ROUND BAR 17-4 CF  
3.25" DIA X 3.8000"  
MARK CUST PART NO. # D4104-0003 ON PACKAGE ✓

10/10/11  

Heat Number	Tag No	Quantity	PCs	WT LBS
A17299	940100	3' 9.4000 "	12	109
		TOTAL:	1	12

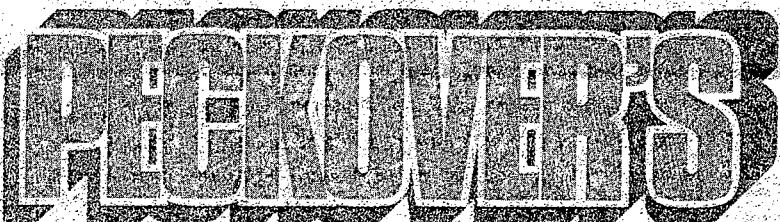
Heat Number \*\*\* Chemical Analysis \*\*\*  
A17299

TOTAL 1 BOX 140 LBS.

\*CUSTOMER PICK-UP HRS AT PECKOVER'S, CONCORD, ONT. \*

\*\*\* 9:00 AM TO 4:00 PM \*\*\*

PLEASE NOTE OUR NEW GST # 140223924  
EFFECTIVE MARCH 20, 2006.



Page 1 of 1 Last

ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY

MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NO.

RECEIVED IN GOOD CONDITION

DATE

GST# R892947458

VK METAL  
DART AEROSPACESTAINLESS STEEL ROUND BAR 17-4 PC  
1/2" DIAM 3.5000"  
PART NO.

PO BOX 977

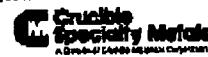
We certify that this is a true copy of the report  
formulated by the supplier of the metal, or their  
representative from tests made in approved labs.

## Certificate of Mill Test Results

REC-19041-001 100600

Pg 1/1

SP 425-60-A

P.O. BOX 977  
SYRACUSE  
NEW YORK 13201

## CERTIFICATE OF TEST

3 COPPER & BRASS SALES INC  
3 ATTN: ACCOUNTS PAYABLE  
3 23305 WEST ELEVEN MILE RD  
1 SOUTHPFIELD MI 48034

SH COPPER & BRASS SALES  
P 6555 E. DAIVISON  
T DETROIT, MICHIGAN  
O 48212-1499

OUR ORDER NO.

PO-12987-6-6

DATE

08 08/09/04

CUSTOMER ORDER # & DATE CK4179	CUSTOMER REF. #	DISTRICT	B PARSONS	SHIPPED FROM	SYRACUSE
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## DESCRIPTION OF MATERIAL

SIZE  
3.250 RD

CRU 17CR-4NI T&P ANN (P/N 408406-7)  
ASTM-A364-04 TYPE 430 AHB-56430 AHB-2803E  
DFA-RB 252.225.7014 & 225.7002-3 (B)(1) COMPLIANT

HEAT NO	CHEMICAL ANALYSIS											
	C	MN	P	S	SI	NI	CR	MO	CU	CB	TA	
A17799	.041	.53	.027	.020	.55	4.30	15.40	.050	3.14	.25	.007	

QUANTITY	HEAT NO.	MECHANICAL PROPERTIES											
		TENSILE PSI	YLD.20% PSI	ZENONB1D	RED/AREA%	HARDNESS							
1935 # A17799	199,990	173,630	100%	100%	100%	100%	100%	100%	100%	100%	100%		

MACRO TEST OK  
FERRITE 5 %  
MAGNAFLUX F/B = 0/0

Date 1 55.3 10-03-06 HBN 361  
 Cust PE-Kovers  
 W/O # 7E912Y4  
 Only 109 Pcs.  
 Size  Special Instructions  
 Part #  Alloy  Heat/Lot  
 These test reports are for material shipped  
 100% OK 62728  
 CRUCIBLE METALS SALES

MATERIAL FREE FROM MERCURY CONTAMINATION AT TIME OF SHIPMENT  
NO WELD REPAIR PERFORMED  
MATERIAL MELTED IN U.S.A.

THANK YOU FOR SELECTING A QUALITY PRODUCT  
MANUFACTURED BY THE EMPLOYEES OF CRUCIBLE SPECIALTY METALS IN

THE ABOVE MATERIAL WAS MANUFACTURED AND TESTED IN ACCORDANCE  
WITH ABOVE SPECIFICATIONS AND IS IN CONFORMANCE WITH THOSE  
SPECIFICATION REQUIREMENTS  
CRUCIBLE MATERIALS CORPORATION  
ACTING BY AND THROUGH ITS SPECIALTY METALS DIVISION

SWORN TO AND SUBSCRIBED BEFORE ME THIS

DAY OF 20

CERTIFIED  
BY

NOTARY PUBLIC

JOHN M. FIRMAN

MANAGER OF QUALITY ASSURANCE

QUALITY ASSURANCE REPRESENTATIVE